From "Wetland Program Development Grants (WPDGs) Case Studies"
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Virginia Institute of Marine Science (VIMS): *Building Virginia's capacity to assess wetland function and value by developing hydrogeomorphic (HGM) models and creating a GIS targeting tool to prioritize restoration*

Introduction

The Virginia Institute of Marine Science (VIMS) is a graduate school of the College of William and Mary and one of the largest marine research and education centers in the United States. VIMS mission, mandated by the Code of Virginia, is to conduct interdisciplinary research, educate students and citizens and provide advisory service. VIMS is written in the state laws as a major scientific advisor to the Commonwealth of Virginia. Within VIMS, the Center for Coastal Resources Management Wetlands Program works with the Virginia Department of Environmental Quality and supports informed management of tidal and non-tidal wetlands and riparian areas through resource inventory and monitoring, conducting applied research, providing council to regulatory programs and offering diverse training tools for managers.

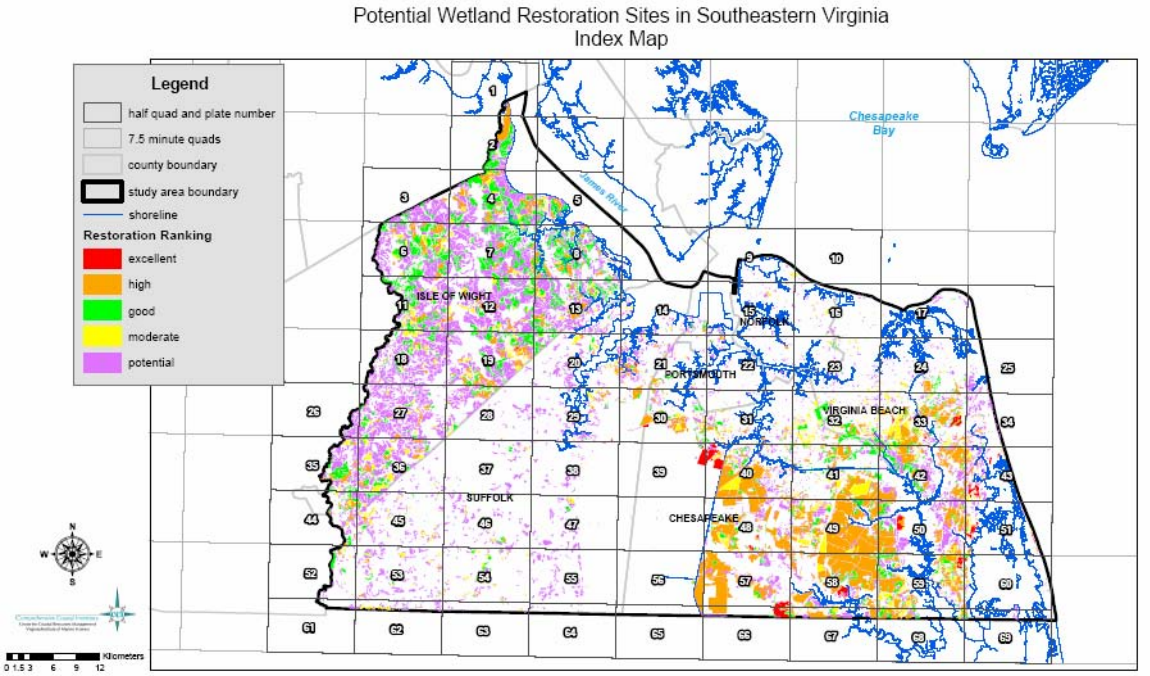
VIMS used WPDGs to develop regulatory and non-regulatory components of Virginia's wetland program from the onset of the EPA grant competition. VIMS progressive research strategies and goal oriented approach in developing the wetland program have allowed them to make significant strides in the mapping, monitoring and assessment of Virginia's wetland resources. They have also worked hard to increase accessibility to information and technological tools gained through their research efforts and facilitate communication between stakeholders.

WPDG Activity

Early activities of VIMS focused on better understanding the wetland resources. They spent several years developing assessment protocols that would articulate the function and value of specific wetland resources. Most recently, VIMS undertook several successive projects that worked to develop Hydrogeomorphic (HGM) models for different wetland types in Virginia. They consulted HGM models from Kentucky, Pennsylvania and North Carolina as well as models developed by agencies such as the Natural Resources Conservation Service. These models provided guidance and a template to create HGM models applicable to Virginia wetlands.

Thus far, VIMS has HGM models in various phases of development and publication for hardwood mineral flats, forested depressional, woody depressional and forested headwater wetlands. VIMS is also working in a collaborative effort with Maryland and Delaware to draft a regional woody depressional wetland model. These models will prove invaluable as the HGM method for assessing wetlands becomes more integrated in federal and state wetland management. The U.S. Fish and Wildlife Service recently completed National Wetland Inventory (NWI) maps for the state of Virginia. These maps provide wetland location and type (estuarine, lacustrine, riverine and palustrine) based on trained interpretation of high altitude aerial photography. VIMS used GIS analysis of the NWI maps for better estimates of isolated and headwater wetland acreage.

In 2002, VIMS Center for Coastal Resources Management developed a GIS targeting tool for selecting sites for wetland mitigation and restoration. The tool utilizes a hierarchical approach and ranks potential sites based on the number of conditions met. The targeting tool considered only land cover types classified as forested or agriculture by the National Land Cover Dataset (NLCD). Sites were assigned a ranking within four potential levels, with level four sites exhibiting the highest potential for success. Sites that received an "excellent" ranking at Level 4 included agricultural areas that had hydric soils, hydrologic connectivity, were adjacent to another wetland and close to a conservation area. The map below illustrates how sites ranked within a pilot region of the study. This tool, which incorporates physical characteristics, land-use practices/management and ecological value, seems a very valuable resource for Virginia land use planners and state and local government officials as they make decisions on wetland mitigation and restoration.



* Adapted from "Protocols for Implementation of a GIS-based Model for the Selection of Potential Wetlands Restoration Sites Southeastern Virginia" (published by CCRM in June 2002).

Current Work and Future Plans

VIMS is actively involved in the continued enhancement of Virginia's tidal and non-tidal wetlands programs. Their work to create an on-line database for tracking permits applied for and received in the tidal wetlands program led to the recent incorporation of no net loss/full compensation requirements by the Marine Resources Commission. They are also working with MD and DE to develop a regional guidebook for tidal wetlands assessment and with the Virginia Department of Environmental Quality (VaDEQ) in the non-tidal wetlands program. VIMS is working in partnership with VaDEQ and the Virginia Marine Resources Commission to incorporate cumulative impact assessments in the tidal and nontidal wetlands permit review process. They hope to create a means for continual monitoring of Virginia's nontidal wetlands condition by developing a status report based on remote-sensing and ground-truthing.

Please visit the Virginia Institute of Marine Science Center for Coastal Resource Management website (http://ccrm.vims.edu/) for more information about VIMS continual efforts to monitor and assess Virginia's coastal wetland resources.

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